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JUL 16 2008

Appl No.: 10/729556

Response dated:

Office Action dated: January 16, 2008

**REMARKS/ARGUMENTS**

Claims 13 and 17-22 are currently pending in the application. New claims 24 and 25 are added for consideration.

**Section 112 Rejections**

Claim 21 currently stands rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the enablement requirement. In particular, the Examiner asserts that the use of polarization of one of the switching modes of the present invention is not described in the specification in such a way as to enable one skilled in the art to make or use the invention of claim 21.

Applicants respectfully traverse this rejection. The present application discloses independent multiplexing and switching across multiple dimensions—space, wavelength, waveband, time, polarization, and the like, and shows specific examples of such multiplexing for various combinations of wavelength, space, and waveband. Once the general concept and structure of such multiple-dimension orthogonal multiplexing is described, extension by adding time multiplexing, or polarization multiplexing, or other dimensions, is within the capability of one of ordinary skill in the art. Both time multiplexing and polarization multiplexing are known in the art. The particular dimensions used are not as of much significance as is the ability to use multiple dimensions, even more than two, in mutually independent fashion so that selection at one receiver of a particular combination of dimensions has no effect on the ability to select, at another receiver, any other combination, or even the same combination, of dimensions. In other words, any channel may be received at any receiver at any time.

Once this larger architectural characteristic of the present invention is understood, one of ordinary skill is able to add a polarization dimension if desired. The generic practice of polarization-based optical switching has been known for some time—for an example reference, see Richard A. Soref, "Low-Cross-Talk 2x2 Optical Switch," in *Optics Letters* Vol. 6, No. 6, p. 275 (June 1981).

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**Section 103 Rejections****Suemura in view of either Con-Carolis or Tamil**

Claims 13, 17, and 19-22 currently stand rejected under 35 U.S.C. § 103 as being unpatentable for Suemura, et al (US Patent No. 6,333,800) in view of either Con-Carolis, et al (US Publication No. 2004/0042796) or Tamil, et al (US Patent No. 7,272,309). Applicants respectfully traverse this rejection. None of the references cited teach or suggest, in combination with the other features recited in claim 13, the use of "one or more optically actuated SOAs" as recited in the claim. Accordingly, there is no prima facie case of obviousness based on the cited references for claim 13 or the claims depending therefrom.

More significantly, the primary reference, Suemura, does not teach or suggest, in the context of the invention disclosed therein, "a distribution subsystem structured and arranged so as to be able to distribute independently and contemporaneously the signals of every transmitter to every receiver" as further recited in claim 13. For example, in Fig. 4 of Suemura, it may be seen that a receiver downstream of any of optical fibers 90-93 (shown at the right of the figure) cannot have distributed to it the signals of every transmitter. Instead, fiber 90 can only carry wavelengths 0, 4, 8 or 12, fiber 91 can only carry wavelengths 1, 5, 9, or 13, and so forth. See column 11, lines 48-57, for example. None of the other embodiments of Suemura show "a distribution subsystem structured and arranged so as to be able to distribute independently and contemporaneously the signals of every transmitter to every receiver" as recited in the claim, nor do the other references add anything in this regard. For this additional reason, claim 13 and the claims depending therefrom are believed to be allowable over the art cited.

**Suemura in view of either Con-Carolis or Tamil further in view of Prucnal**

Claims 13, 17, and 19 - 22 also stand rejected under 35 U.S.C. § 103(a) as being unpatentable for Suemura, et al (US Patent No. 6,333,800) in view of either Con-Carolis, et al (US Publication No. 2004/0042796) or Tamil, et al (US Patent No. 7,272,309) and further in view of Prucnal (US Patent No. 7,035,550).

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Applicants respectfully traverse this rejection, for the second reason given above, that is, Suemura, does not teach or suggest "a distribution subsystem structured and arranged so as to be able to distribute independently and contemporaneously the signals of every transmitter to every receiver" as recited in claim 13, nor do the other references, including Prucnal, add anything in this regard. For this reason, claim 13 and the claims depending therefrom are believed to be allowable over the art cited.

Comment on "Orthogonal" Multiplexing

The applicants define this term as requiring at least separate independent (non-interdependent) parameters in the multiplexing scheme, not merely separate parameters as mentioned by the Examiner.

New claims

New claims 24 and 25 have been added for consideration in the present application. New claim 24 is believed allowable on a basis similar to that explained for claim 13 above. New claim 25 is believed additionally allowable in that the art of record is not believed to show three independently accessible dimensions as recited.

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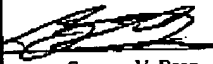
**Conclusion**

Based upon the above amendments, remarks, and papers of records, applicant believes the pending claims of the above-captioned application are in allowable form and patentable over the prior art of record. Applicant respectfully requests that a timely Notice of Allowance be issued in this case.


Applicant believes that a three-month extension of time is necessary to make this Reply timely. Should applicant be in error, applicant respectfully requests that the Office grant such time extension pursuant to 37 C.F.R. § 1.136(a) as necessary to make this Reply timely, and hereby authorizes the Office to charge any necessary fee or surcharge with respect to said time extension to the deposit account of the undersigned firm of attorneys, Deposit Account 03-3325.

Please direct any questions or comments to Gregory V. Bean at 607-974-2698.

16 July 2008  
Date

CERTIFICATE OF TRANSMISSION	
UNDER 37 C.F.R. § 1.8	
I hereby certify that this paper and any papers referred to herein are being transmitted by facsimile to the U.S. Patent and Trademark Office at 571-273-8300 on:	
16 July 2008	Date
	16 July 08
Gregory V. Bean	Date

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